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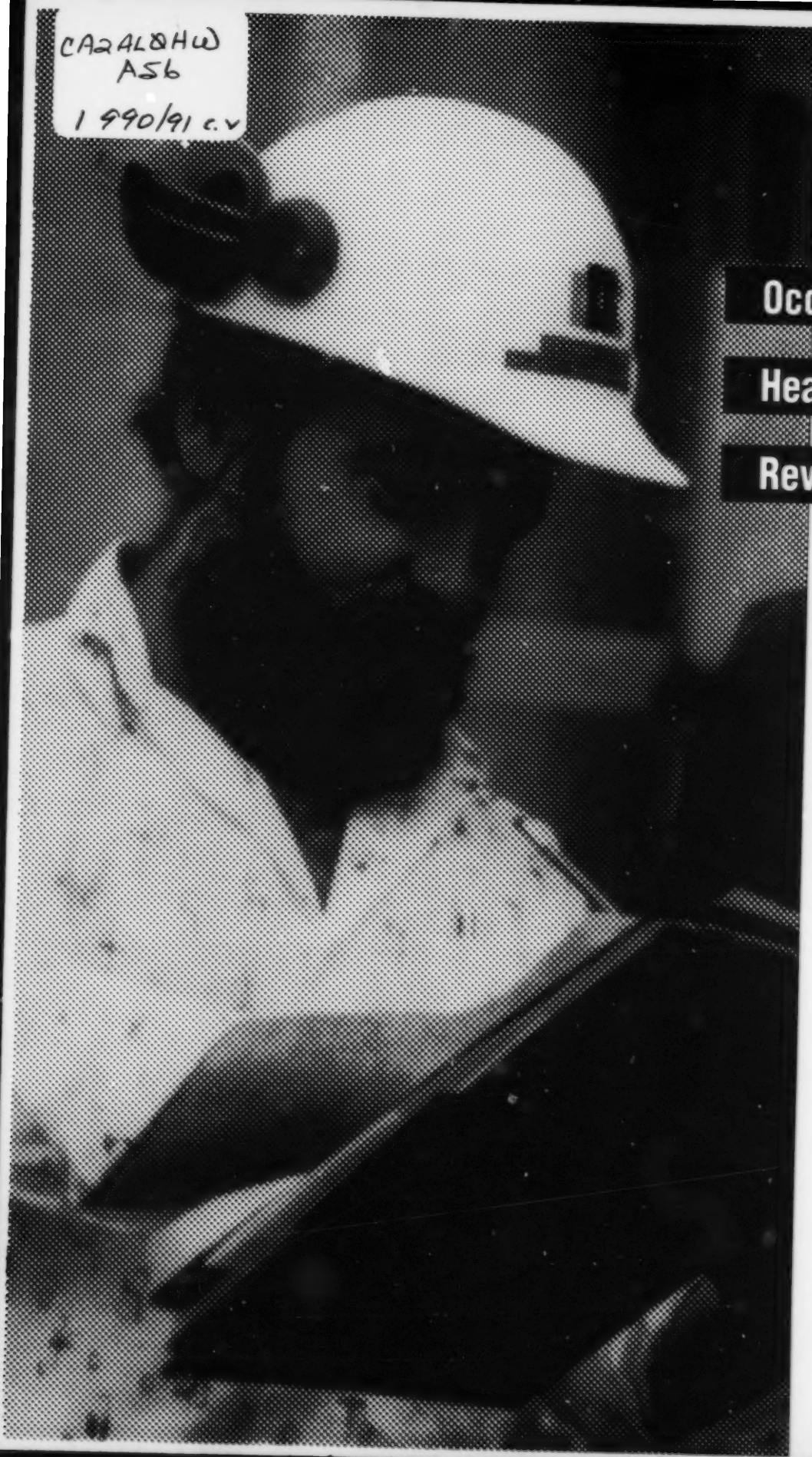

[1990/91]

Occupational Health and Safety Review

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OCCUPATIONAL HEALTH AND SAFETY

Introduction

The Occupational Health and Safety Review is an annual publication of Alberta Occupational Health and Safety.

It is designed to provide a forum for information about current issues in, and approaches to, occupational health and safety in Alberta. In addition, the Review provides annual statistical information about the state of occupational health and safety in the province.

Published February 1992

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Minister's Message: Employer Responsibility

In last year's review of occupational health and safety in Alberta we said progress depends on new approaches and new methods. In this year's Review we look at one of the more significant approaches– employer responsibility – and how it is making Alberta a safer, healthier place to work.

An example I like to use, and one described in this publication, is that of the responsibility shouldered, and the success being achieved, by employers and workers in Alberta's oil and gas industry.

In 1986, the injury rate in the oil and gas well drilling and servicing sectors was almost three times the average injury rate for all Alberta industries.

Early in 1987, the Government of Alberta committed to seeing the industry improve its health and safety record. The Government did not propose new legislation or a significant increase in work site inspections—these would have been the traditional responses. Instead, the onus was put on the industry. The tools, like legislation and inspection, were already in place. It was the industry's responsibility to make its workplaces healthy and safe. It was the industry's responsibility to ensure the health and safety of its workers.

The industry responded by creating UPITFOS (Upstream Petroleum Industry Task Force on Safety). The combined efforts of industry, government and labour to implement the recommendations of UPITFOS have resulted in a greater than 50 per cent decrease in the rate of injury experienced by drilling and servicing sector workers.

Employers have a legislated responsibility for ensuring the health and safety of their workers. The Government plays a vital role ensuring they are aware of the responsibility, and providing tools and assistance necessary to help meet the responsibility. Promoting employer commitment and responsibility is proving to be an effective approach. The ongoing challenge is to get more Alberta employers adopting health and safety as a way of doing business.

The Honourable Peter Trynchy
Minister Responsible for Occupational Health and Safety

Managing Director's Message: New Approaches

Speeders can't be deterred just by giving out traffic tickets. People have to understand the rules and want to follow them. It's the same with workplace health and safety. Alberta Occupational Health and Safety (AOHS) cannot catch every health and safety violation. Our challenge is to raise awareness and bring influence to bear so health and safety moves from a one-on-one regulatory issue to a broader social concern; where employers and workers understand the rules and want to follow them.

Many worksites committed

In Alberta, many worksites are committed to health and safety. At those worksites employers understand that workers are valuable and hard to replace, injuries and incidents do a lot of damage to a business, and a serious injury or death is a devastating event.

Injuries and injury-producing incidents are solvable problems. They're not unpredictable or uncontrollable; they're ***not*** *'accidents.' They occur when circumstances expose an unprotected worker to a hazard. The circumstances and the exposure can be controlled. The injury can be prevented.*

Finding and using other methods

Traditionally, AOHS has been on the worksite, correcting, insisting on correction and, when necessary, going to court. That's important, but it's not sufficient. It's time-consuming, costly and inefficient.

We have found that we can be very efficient working with large employers, with industry and labour associations and with the growing number of safety associations. We are getting them committed to the issue of workplace health and safety, and getting them to acknowledge their roles and responsibilities for ensuring safe and healthy workplaces. This is providing us with the means for reaching larger numbers of workers and employers than ever before.

Our partnership with the Workers' Compensation Board (WCB) is also crucial. We are working with them to develop a number of injury reduction initiatives. Some of these initiatives involve providing employers with financial incentives for achieving injury reduction targets.

These have been big changes for health and safety, for the WCB and for AOHS. But early results indicate that these new approaches — promoting employer responsibility and providing financial incentives — coupled with our traditional roles and our new partnerships are improving performance significantly.

A number of industries (for example, upstream oil and gas, forestry, road building, meat packing, and residential construction) are very much involved with new ways of doing things. This edition of the Occupational Health and Safety Review examines some of the successes achieved when employers recognize and take responsibility for health and safety at the worksite.

Hugh Walker
Managing Director, Alberta Occupational Health and Safety

A Joint response

"I have seen people walk away without their toes," says Bob McLennan of the resource consulting firm, McLennan and Associates. As the owner-operator of a small oil and gas company, McLennan is often doing field work. "I've seen a lot of accidents," he says. "Safety is something I particularly wanted to see improved."

In the late 1980s, newspaper headlines screamed for change: *Falling pipe kills young rig worker; Worker hurt in well fire*, and so on. During the last three months of 1986, nine workers were killed in the oil patch. One columnist renamed the patch "the Killing Fields." Something had to be done.

The joint response of government and the oil and gas industry to this situation is just one example of industry and government working together to improve health and safety, and of employers accepting and committing to their responsibility for workplace health and safety.

Employers responsible

Early in 1987, the Government of Alberta made a strong public commitment to work with the oil and gas industry to improve health and safety. The Government did not advocate new legislation or increasing inspections. Instead, industry was reminded of its already legislated responsibility.

According to the Occupational Health and Safety Act, every employer shall ensure the health and safety of his workers and ensure that workers are aware of their responsibilities and duties under the Act.

The oil and gas industry responded, forming UPITFOS — Upstream Petroleum Industry Task Force on Safety. Five industry associations were behind the task force: Canadian Petroleum Association, Independent Petroleum Association of Canada, Canadian Association of Oilwell Drilling Contractors, Petroleum Services Association of Canada, and the Small Explorers and Producers Association of Canada (SEPAC).

Industry aware

"UPITFOS never would have been created if not for government saying we had to do something," says Bob McLennan, a member of both SEPAC and UPITFOS. Today, adds McLennan, "the oil industry is very aware of safety."

After one and one-half years of meetings involving industry and a number of government agencies, UPITFOS published its report. The report opens with a signed declaration from the chief executive officers of the five associations. Entitled "Petroleum Industry Guiding Principles for Worker Safety," the declaration states that the petroleum industry has, "a responsibility to protect all workers engaged in its activities from personal injury and health hazards."

"Hundreds of upstream people were involved in UPITFOS," says McLennan. "Through that involvement, people became aware of health and safety issues. And that's the key to it all — making people aware. There is something we can do. You don't put people in a spot where they can get hurt. It's people that make the industry work. And if you hurt people, they can't contribute."

Helping employers get started

The UPITFOS report contains more than 60 pages of recommendations dealing with issues such as training, inspections, codes of practice and safety guidelines. One of the more significant recommendations dealt with the need for companies to have and use effective health and safety programs.

In late summer 1991, after much hard work by a joint industry and government working committee, UPITFOS published a manual containing a generic health and safety program, a how-to guide and a basic health and safety audit program.

Bill Douglas, a consultant contracted by the task force, says the new program can be used as a template or guide by any operating company and its contractors. Douglas says it would cost a company about $4,000 to develop a similar program on its own. The new manual, at $150, should make it a lot easier for operators to get started with a health and safety program.

"When you are inspecting rigs, you can only catch a few who are committing infractions," says Douglas. "You can't possibly catch everyone. And the companies think, If I am not getting caught, then everything's okay.

"But if you can help companies develop their own health and safety programs, instead of covering things up and hoping not to get caught, companies see the advantages and get involved."

Taking Responsibility

The van travelling north on Highway 43 never reached its intended destination. Just before Fox Creek, it spun out of control and rolled into the ditch, killing seven passengers and injuring another five. The victims were students working for the summer as tree planters. A few weeks later, there was another incident: four tree planters, working for an Alberta company, drowned when their van plunged into a creek in British Columbia.

"Those two incidents were the straw that broke the camel's back," says Lawrence Guenette, an AOHS health and safety officer. He explained that the van was considered a worksite because the tree planters were en route to a new location. "Tree planting has a high injury frequency rate. They may think it's not dangerous, but there are a lot of strains, sprains and incidents with all-terrain vehicles, and the transport of workers is part of the job."

Peter Gommerud of Tsuga Forestry in Edmonton says tree planters didn't pay a lot of attention to health and safety in the past. "If you're working at an oil well, you know it can blow and you watch out. But with tree planting, people haven't been as concerned about safety." Tree planting is also a seasonal business employing a lot of students working for the summer. With a short planting season and high staff turnover, staff training can seem like a waste of time and money.

AOHS's managing director, Dr. Hugh Walker, called a meeting to remind Alberta's tree planters of their health and safety responsibilities. In addition, tree planters usually work for a principal contractor. "They are contracted by the Alberta Forest Service or the people who own the mills," says Guenette, "because the companies that cut down the trees also have a responsibility to reforest." So AOHS invited the principal contractors to meet as well.

Guenette says, "We wanted industry as a whole to take responsibility for the issue. By the next planting season we wanted health and safety guidelines in place."

"It was a very positive way of approaching the problem," says Peter Gommerud, explaining that the committee, created to develop health and safety standards, included government and industry representatives. "The government's health and safety representatives said to us, 'Tell us what you think is an issue and what you think should be done.' They would propose standards then ask us whether or not they were practical. We argued about some things, like whether or not hard hats were appropriate head gear. For tree planters hard hats aren't always practical because you're bending down a lot of the time."

The Alberta Forest Products Association took responsibility for drafting the standards. The standards were accepted by industry and government and printed in the spring of 1991. "I know in some provinces," says Gommerud, "government went ahead and developed standards without consulting tree planters. They developed standards no one could use. But this was different. We had input, and in the end we had something we really could use."

Injury rate decreasing

Since 1987, injury rates in the oil and gas industry have decreased almost 35 per cent. In the oil and gas drilling sector the change has been even more dramatic. From 1987 to 1989, the injury rate fell from 14.9 (lost-time claims per 100 person years worked) to 7.1. In 1990, the injury rate improved further, to 5.5 — a 63 per cent decrease from 1987. Improvement in the well servicing sector has been almost as substantial. The service sector's injury rate in 1990 was 7.7, compared to 14.0 in 1987 — a decrease of 45 per cent.

Over the past decade, the injury rate for all Alberta worksites has decreased significantly. In 1981, one out of every 15 workers was injured on the job — a rate of 6.7. In 1990, one out of every 20 workers was injured — a rate of 4.97.

Emmett Reid, an occupational health and safety officer since the late 1970s, says he has seen a dramatic change in attitude during the last five years. "It is like night and day," he says. "Workers now know exactly who I am when I walk on the site. They ask more questions and they want answers."

Reid says there are many reasons for the change in attitude. "It's only in the last couple of years that we have increased our consulting role," suggesting that the consultative approach is more effective.

Bill Myers, the director of AOHS's Northwest Region, is currently on secondment to private industry. He says, "There was a time when we would appear on the site and say, 'This is not right, and this is not right.' " explaining that the AOHS approach now ranges from on-site inspections and enforcement to promotion, education and assistance with implementing health and safety measures.

Adds Myers, "We still do show up on the site, it's an important part of what we do, but on big jobs we are trying to get away from this one-dimensional approach. It is easier for us to have the discussions before the project starts. If we have everything ironed out in the beginning, the day the project starts, everybody knows where everybody else is coming from."

Performance standards

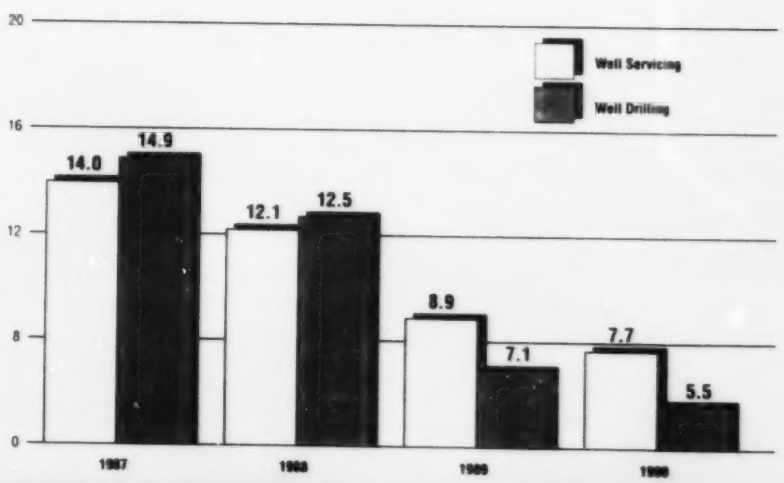
Another reason for employers taking on a greater role and responsibility for health and safety at their worksites is revised health and safety regulations. "Prior to 1984," says Emmett Reid, "there were more than 1,000 specific regulatory provisions, and the regulations said, you shall do things, and you shall do them this way.

"The current General Safety Regulation contains far fewer regulatory provisions, and they're performance-based. Two people can now do the same job in completely different ways and still be right, as long as they have developed procedures that ensure the health and safety of workers."

Dennis Locking, safety manager for the construction company, Volker Stevin, says, "What got the whole ball rolling was Occupational Health and Safety going to performance-based standards. Rather than have direct regulations — you shall do this, you shall not do this — the regulations take a generic approach. You have to keep your workers safe and you should keep them safe by making sure you do things based on the highest accepted standards.

"For that to work, industry has to take a much more active role. They have to baby-sit themselves rather than rely on government to set down specific regulations. Government becomes more of a watchdog and a cheerleader, while we in industry make sure we take care of our own house."

Lost-Time Claim Rates, Oil and Gas Well Drilling and Servicing Alberta 1981-1990 (Rate per 100 Person-Years Worked)



Doing Business

Technically, everything that happens on our site is our responsibility," says Romeo Piquette, safety affairs manager for Celanese Canada Ltd. "That's what the Occupational Health and Safety Act says — You're responsible."

Celanese Canada is part of *Partnerships in Health and Safety*, a program that recognizes employers with effective health and safety programs. AOHS helps employers develop the program, which must then be independently audited before the company receives recognition from AOHS.

Principal contractors on board

Celanese Canada is extending its *Partnerships* commitment to all of its contractors. "Our intent is, wherever possible, to employ contractors who belong to *Partnerships*," says Piquette, explaining that on average there are 100 contract workers on the Celanese site in Edmonton. "While we may not have direct supervision of the contractors, it's up to us to determine if contractors allowed on site have an approved health and safety program. If we assist them in joining *Partnerships* we can be more sure of consistent health and safety programs."

The Alberta Construction Safety Association (ACSA), representing 16,000 Alberta construction companies, invites companies to join its injury reduction program. "It's a voluntary thing," says Jim Riches of the ACSA, adding that the Association takes responsibility for promoting and advertising this joint ACSA/AOHS/WCB program and also provides its members with appropriate education and training.

The involvement of the Construction Safety Association and companies like Celanese Canada is a reflection of AOHS's approach. "If you bring the associations on board, you also bring their many members," says Barry Munro, executive director of AOHS's Health and Safety Programs Division. "By working with principal contractors you have influence over their many sub-contractors. This approach is proving to be extremely effective at reaching and influencing large numbers of employers and getting them involved and committed to health and safety on their worksites."

AOHS helps its partners set standards and develop model health and safety programs. The associations or principal contractors then provide education and training to help their member or contracted companies introduce the program.

Windows of opportunity

Health and safety programs need to be accessible and able to meet a variety of needs. To make sure this is the case just about any company can participate in a number of work injury reduction programs offered by both AOHS and the WCB. These programs include the AOHS *Partnerships in Health and Safety*, the WCB *Window of Opportunity* and *Work Injury Reduction* programs, and a number of joint AOHS/WCB/industry programs.

An example of a joint initiative is ACSA's program, where member companies must set up approved health and safety programs. Company programs are then audited before a company can be recognized by AOHS as a *Partner in Health and Safety*.

Employers try to reduce work-related injuries and lower their WCB costs. They set a goal — perhaps 10, 15 or 20 per cent — and try to reduce injuries and their WCB costs by that amount. In most cases, employers who reach their goal not only get a partial rebate of their WCB contributions, but with an improved health and safety record their future assessment will likely be at a lower rate. Companies that don't reach their goal receive no benefit, and may even see future assessments rise as they fall further below their industry's average health and safety record.

In January 1991, employers belonging to the Alberta Roadbuilders Association joined the ACSA's injury reduction program. "We were hoping that health and safety programs and training would reduce our total WCB costs by 15 per cent," says Dennis Locking, safety manager for Volker Stevin, a member of both the ACSA and the Roadbuilders Association.

"The companies participating in the program wanted to reduce the number of injury accidents to 185 and to reduce our WCB costs to $481,690. By the end of July 1991 we had only 30 claims, and we had reduced our WCB costs to $102,629.37. Things are way better. We're really in good shape so far."

Controlling Loss

"We are looking at making health and safety programs a way of doing business," says Barry Munro. "We want all companies to have a health and safety program. Not just any health and safety program, but an effective program."

Health and safety programs reduce workplace incidents, but they can also be good management tools — a way of controlling loss and encouraging quality performance. "If you do it right the first time," says Bob McLennan of McLennan and Associates Ltd., "you don't have to pay bills later to correct it."

In Managing for Results, *Peter Drucker talks about controlling waste. Accounting figures "rarely include the often high price for interruption of work and diminution of productivity." And he adds, "Many wasteful activities are hard to get rid of. It sometimes requires a major redesign of a whole business; more often it requires basic changes in operating principles, in equipment, in policies."*

Munro adds, "We're trying to convince employers that the marketplace is changing, becoming more global. To compete, companies have to manage their losses." A study entitled "Characteristics of Successful Safety Programs," published in the Journal of Safety Research revealed that high incident and injury rates are associated with "greater turnover, more absenteeism and less work group stability." The study also revealed that companies with low incident rates "reported having higher financial stability and solvency than the high accident rate plants."

Workers the key

At Celanese Canada, managers make a commitment to health and safety. Workers share in the responsibility and help make the program work. "It is our responsibility as management to provide a safe and healthy workplace and make sure people are trained," says Romeo Piquette. "But the actual work is done by the workers. So they are involved in setting up meetings, looking at their own work area and making recommendations on how to do the work more safely."

Dennis Locking agrees. "We are a fairly large company," he says about Volker Stevin, "and we already had a fairly good safety program. Our problem was accountability and ownership, and the ACSA injury reduction program seemed to encourage ownership with the guys in the field. That's the key - ownership by the fellows who really make a difference - the guys in the field."

Locking says ownership starts at the beginning, as workers help develop the company's health and safety policy and procedures. Then, after the program has been introduced, it's the workers who keep the workplace safe. "Something goes wrong. Who does the investigation? Is it the safety guy who comes out and nobody knows what's going on? Or is it the floor man and the people involved in the incident who investigate it? Ideally, through this program, it's a combination. They do it under the direction of someone who knows how to investigate, but they are involved. You are putting responsibility for actions with workers."

Adds Locking, "If this program works properly, you have the worker and the employer out looking at the site and saying, 'That's not safe. Let's fix it.'"

Widening the Circle

"Alberta is considered the leader in North America," says University of Alberta researcher, Dr. Betty Crown. "Industry here is taking a lead role in providing protective clothing. I wouldn't have said that three years ago."

Dr. Crown is referring to the results of a three-year research project, funded through a $183,500 Occupational Health and Safety Heritage Grant. The Heritage Grant Program invites Albertans to look for solutions to health and safety problems. Dr. Crown's team was analyzing the effectiveness of fire resistant clothing.

"The research project was conceived," says Dr. Crown, "because we'd had so many questions and requests from industry. There were quite a few different products on the market, but no independent sources of information on product effectiveness."

Fabric and garments were tested in the laboratory, then in industrial situations. An inter-disciplinary team developed a thermal mannequin to estimate skin-burn damage under various conditions. The mannequin was the only one of its kind in Canada, and one of only three in existence.

"When we started the project and spoke to people in the field," says Dr. Crown, "people thought they should recommend heavy cotton for protective clothing. They really believed heavy cotton was the safest because, if it doesn't ignite, it will protect well and provide insulation. We were able to demonstrate that if a flash fire is brief enough the cotton doesn't ignite. But if it does ignite, the cotton becomes fuel."

The Occupational Health and Safety Heritage Grant Program began in 1981 with a $10 million Alberta Heritage Savings Trust Fund capital investment. The program has funded close to 200 projects: educational projects, research initiatives, handbooks, videotapes and reports. Open to employers, associations, unions, non-profit societies, educational institutions and private individuals, the program is widening the circle of expertise advancing workplace health and safety in the province.

Safety training

Hydrogen sulphide (H_2S) is a major component of sour natural gas and a by-product of more than 70 industrial operations. Between 1976 and 1989 Alberta Occupational Health and Safety investigated 30 fatalities involving H_2S.

The Petroleum Industry Training Service (PITS) was awarded a $101,000 Heritage Grant to develop hydrogen sulphide safety courses: "H_2S Alive," "H_2S Rescue" and an instructor certification course. Since the courses became available more than four years ago, more than 44,000 workers have competed training and 400 instructors have been certified.

"Alberta is definitely a leader in H_2S training," says Wayne Wetmore, vice-president of Training and Development for PITS. "The first thing we did was look at what was available throughout the world. We couldn't find anything out there that was better than or, in some cases as good as, what we already had. We believe we have the best H_2S training program in the world."

With other funding, PITS built a H_2S rescue training facility at Nisku, Alberta. The building has a "ready room" and a simulated oil industry environment where life-like rescues are carried out. "Students have to rescue dummies about the same size and weight as a person," says Wetmore. "Many go in with no idea how to lift an unconscious person. When they're unconscious, they can't help you. The students use carrying techniques they've learned in the rescue course.

"We can make the room dark or fill it with non-toxic smoke. They find out whether they're using their breathing apparatus properly. It's the best training we can do in a simulated environment."

There were no hydrogen sulphide work-related fatalities in Alberta in either 1990 or 1991.

Increasing awareness

Along with education and research projects, the Occupational Health and Safety Heritage Grant Program supports conferences that increase understanding and awareness of health and safety issues. "The Banff Roundtable was a catalyst for change," says Maureen Shaw, describing the 1989 health and safety conference, the Banff Roundtable on Occupational Health and Safety in Alberta. "I think it had a profound impact. We certainly accomplished our goals in providing future directions."

Maureen Shaw is now with the Canadian Centre for Occupational Health and Safety, but at the time of the conference, she was chairing the Alberta Occupational Health and Safety Council. The Council is an employer, worker and public membership group advising the Minister Responsible for Occupational Health and Safety on matters dealing with workplace health and safety. Travelling the province and meeting with individuals from all walks of life, Shaw and the Council saw that attitudes were changing and interest in health and safety was rising. But there was no direction or plan for action.

"It was time to bring together key stakeholders in the province to talk about the real issues in health and safety," says Shaw. "They needed a catalyst to get them together. Someone had to take the lead."

With a $55,400 Heritage Grant, the Banff Roundtable brought together 90 leaders from industry, government and labour for a two and one-half day conference. Participants agreed on major issues and discussed innovative approaches to dealing with major occupational health and safety issues. Says Shaw, "The Banff Roundtable is a good example of how the Heritage Grant Program can be used. Funding from the program was not ongoing, but the assistance provided is having long-term and positive results. It's still raising awareness among major workplace players. And it has led to positive action" — such as the Conference Society of Alberta's October 1990 conference on workplace health and safety, and creation of the tri-partite Forum for Action on Workplace Health & Safety.

"It was vital that the key players from industry, labour and government sit together to discuss these important issues," says Shaw. They did, and we are now beginning to see the positive results.

New Kids

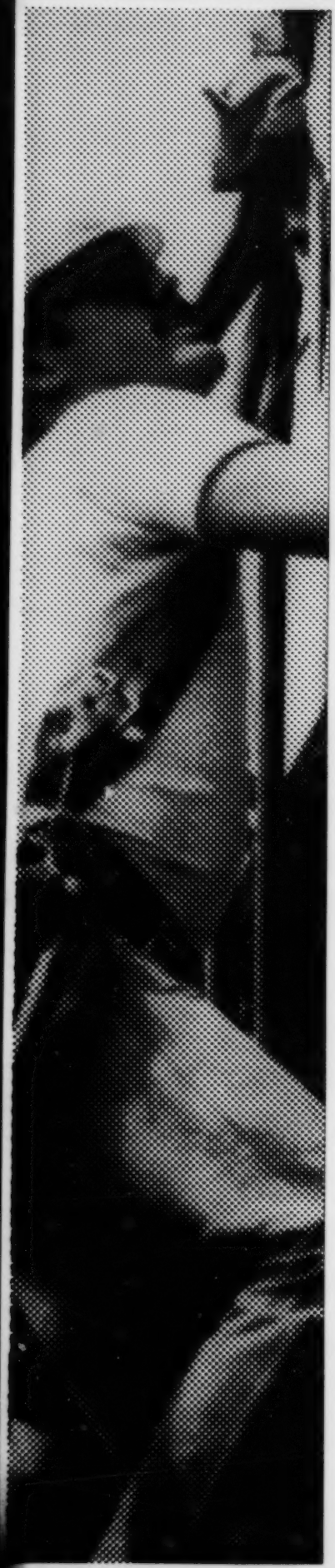
"We were the new kids on the block," says Eric Ferrie, describing the newly formed Alberta Loggers Association. The Association first formed in 1988, then reorganized in 1989 with new members and a new emphasis on safety — a big issue in the logging industry. One of the Association's first initiatives was to develop a model health and safety program specifically for small employers in the industry. It's doing that with funding from the Occupational Health and Safety Heritage Grant Program.

Forest industry workers face the highest risk of work-related death in Alberta — 14 times the provincial average. "Everybody knows somebody who has been hurt," says Ferrie, adding that most logging incidents result from improper or inadequate training. "We're attacking the problem on two fronts. First, by working with the colleges to improve training, and second, by raising safety standards."

Logging companies are already making changes. The industry is moving away from hand falling (using chain saws) to feller bunchers, a much safer mechanical system. Throughout the forest industry, there is a growing interest in health and safety.

"Basically, the owner-operator is the logger," says Ferrie, explaining that most logging companies are small companies contracted by the mills. "You have maybe one or two machines. You don't have administration or office-type people. We expect the mills — like the oil companies — will start looking at the loggers and saying, 'Unless you have a safety program, we won't hire you.' They'll say, 'Let's look at your record.' "

It adds up to a need for a logging safety program—a need that is being met by the Heritage Grant program. "I believe they'll go for it," says Mr. Ferrie. "I know our members want it."



Financial Information 1990/91

Occupational Health and Safety Services Budget Estimates, Special Warrants and Expenditures by Vote

Vote 12— Alberta Occupational Health and Safety Services

Description ($000)	Original budget estimate 1990/91	*Revised budget estimate 1990/91	Special warrants 1990/91	Expenditures for the year ending: 1989/90	1990/91
Minister's Office	255	255	0	246	246
O. H. & S. Council	120	120	0	104	82
Executive Services	384	384	0	351	309
Personnel, Finance & Admin.	725	725	0	748	759
Program Support	1,620	1,722	0	1,579	1,721
Policy and Prof. Services	2,497	2,335	0	2,441	2,279
Health and Safety Audit	242	242	0	253	255
Field Operations	6,291	6,189	0	6,014	6,364
Total	12,134	11,972	0	11,736	12,015

Notes:

* Revised Budget Estimate- decreased by 162 to cover overexpenditure from the previous year (1989/90)

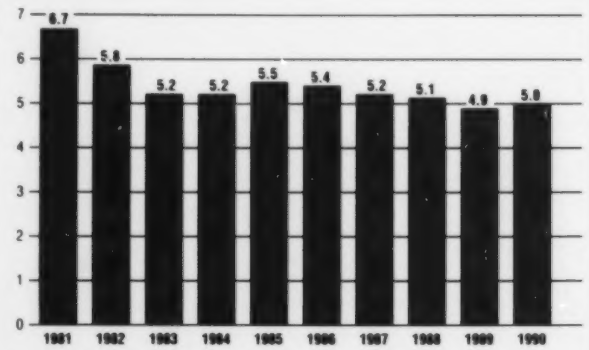
Please note that 50% of the annual expenditures are recovered from the Workers' Compensation Board and are paid into the General Revenue Fund.

Vote 13— W.C.B. Pre 1974 Pension Payments

Description ($000)	Original budget estimate 1990/91	Special warrants 1990/91	Expenditures for the year ending: 1989/90	1990/91
Workers' Comp Board	13,800	0	13,448	13,800

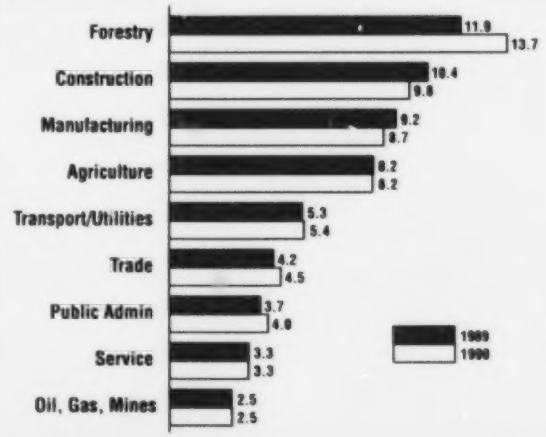
Statistical Information

Annual Injury Rates- Alberta 1981-1990
(Rate per 100 Person-Years Worked)



Note: Railways are included from 1983, Alberta Government from 1984, and the telephone industry from 1987. Government of Canada is excluded throughout. All injury data are based on lost-time claims submitted to and accepted by the Alberta Workers' Compensation Board.

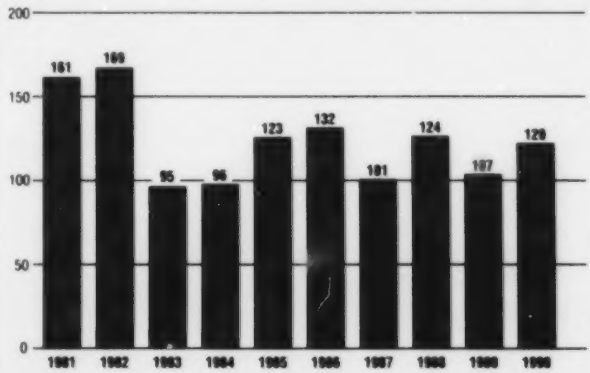
Major Alberta Industrial Sectors Lost-Time Claim Rates 1989-1990
(Rate per 100 Person-Years Worked)



Which Industries are the Most Hazardous (Rate per 100 Person-Years Worked)
In 1990, the 10 industries (with at least 1,000 workers) with the highest injury rates were:

Poultry packing	27.9
Meat packing	25.1
Structural steel fabrication	19.2
Roofing	18.3
Geo-seismic exploration	18.2
Sheet metal construction	17.9
Pre-fabricated buildings	16.8
Specialized industrial trucking	16.2
Furniture moving	15.6
Courier service	15.3

Number of Fatalities Accepted by the WCB- Alberta 1981-1990



Note: Fatalities are counted by year of acceptance, not by year of injury or year of death.

Where to find us

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